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(57) Abstract :
A hierarchical ensemble learning framework for complex datasets is disclosed. The framework includes a data ingestion and conditioning module (101), a hierarchy construction module (102), a node specific feature refinement module (103), a specialized learner bank (104), a confidence estimation module (105), a fusion and decision engine (106), and a trace repository (107). Input instances are structurally routed through hierarchy nodes, transformed into localized feature views, evaluated by node bound learners, and adaptively fused using reliability descriptors to generate robust predictive outcomes with scalable processing and traceable decision support.

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